

extus glabro, limbo plerumque revoluto striguloso piloso; drupa ovoidea 1/4 poll. longa. Socotra. On the slopes of the hills at an elevation over 1000 feet. Not at all an uncommon shrub. B.C.S. nn. 299, 520. Distrib. Endemic."

Citations: SOCOTRA: *Bayley-Balfour 299* (F--photo of cotype, It--photo of cotype, N--photo of cotype), *520* (F--photo of cotype, It--photo of cotype, K--cotype, N--photo of cotype, Z--cotype, Z--photo of cotype).

COELOCARPUM SWINGLEI Mold., *Phytologia* 3: 267--268. 1950.

Bibliography: Mold., *Phytologia* 3: 267--268. 1950; E. J. Salisb., *Ind. Kew. Suppl.* 11: 58. 1953; Mold. in Humbert, *Fl. Madag.* 174: 34--36 & 269, fig. 4 (1--3). 1956; Mold., *Résumé* 156 & 454. 1959; Mold., *Fifth Summ.* 1: 261 (1971) and 2: 875. 1971.

Illustrations: Mold. in Humbert, *Fl. Madag.* 174: 35, fig. 4 (1--3). 1956.

This endemic southwestern Madagascar species is known only from sand dunes near the sea, altitude 1--10 m., and has been collected in flower and fruit in August and December.

Citations: MADAGASCAR: *Afzelius s.n.* [20.12.1912] (S); *Humbert & Swingle 5413* (F--photo of type, It--photo of type, N--isotype, N--photo of type, P--isotype, W--1528575--type, Z--photo of type).

NOTES ON THE GENUS *CONGEA*

Harold N. Moldenke

In view of the excellent revision of this genus by my friend and colleague, Dr. Munir Ahmad Abid (1966), it would be presumptuous on my part to continue with my own long-planned monograph. However, it seems desirable to place on record here the extensive notes, chiefly bibliographic and horticultural, and records of herbarium material examined, assembled by me over the past fifty years. This, then, is the 47th genus on which I have written in the present series of notes in this journal. The herbarium acronyms hereinafter employed are the same as used by me in all of my extensive series of papers in this journal since 1933 and are fully explained in my *Fifth Summary of the Verbenaceae*..... (1971), pages 795--801.

CONGEA Roxb., *Pl. Coromand.* 3: 90, pl. 293. 1819.

Synonymy: *Roscoea* Roxb., *Fl. Ind.*, ed. 1, 3: 54. 1832 [not *Roscoea* J. E. Sm., 1804]. *Calochlamys* Presl, *Bot. Bemerck.* 148. 1844 [not *Calochlamys* Miq., 1904, nor P. & K., 1966]. *Rocoea* Roxb. apud Schau. in A. DC., *Prodr.* 11: 624, sphalm. 1847. *Gonjea* Woodr., *Gard. India*, ed. 5, 420. 1889. *Calochlamis* Presl apud Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 100, in syn. 1921.

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In view of Munir's (1966) splendid and exhaustive treatment of the genus, especially as to its nomenclatural and taxonomic history, it seems pointless to give here more than supplementary comments.

Congea, as known now, is a small genus of 17 species, varieties, and named hybrids, native from Assam and Bangladesh, through Burma, Thailand, Malaya, and Indochina, east to Java, Sumatra, and Borneo, and north into southwestern China. *Roscoea* Roxb. is often included "in part" in its synonymy, but is actually based on *R. tomentosa* Roxb. (1814) and therefore nomenclaturally a true synonym of *Congea*. Some authors claim that the *Roscoea villosa* and *R. tomentosa* mentioned on page 95 of Roxburgh's work are composites, *Laggera aurita* Sch.-Bip. and *Conyza tomentosa*, respectively, but there seems to be no valid evidence for this assertion (see under *Congea tomentosa* in the present paper). *Roscoea* J. E. Sm., however, is a genus in the unrelated *Zingiberaceae*.

Meisner (1840) reduces not only *Roscoea* Roxb., but also *Sphenodesme* Jack and *Sphenodesma* Jack to synonymy under *Congea*, but *Sphenodesme* is a distinct genus and the other name is merely an orthographic variant. Bentham (1876) merely reduces "*Roscoea* sp. Roxb. Cat. Hort. Beng. 95, et Fl. Ind. iii.55" to *Congea*. Briquet (1895) reduces "*Roscoea* Roxb. z. T. [in part]" here. Spach (1840) also regarded *Sphenodesme* as a synonym of *Congea*.

Nair & Rehman (1962) describe the pollen grains of *Congea* as 3-zonicolporate with more than one endocolpium per colpus.

Several species of *Congea* have been introduced into cultivation. A few have become naturalized in Central and South America

and Africa. According to Munir, no species of *Congea* is found wild in any part of peninsular India. The statement that *C. tomentosa* occurs wild on the Coromandel coast is an error based on a sentence apparently added to a subsequent reprint of Roxburgh's original description by the misplacement of an isolated printed line belonging to the description of another taxon entirely.

Briquet (1895) and Dalla Torre & Harms (1904) recognized only 4 species in the genus; Clarke (1885) accepted 4 species and 1 variety. Bentham (1876) recognized only 2 species.

It should be pointed out here that the *Calochlamys* of Miquel and of Post & Kuntze, referred to in the generic synonymy above, are synonyms of *Callichlamys* Miq. in the *Bignoniaceae*.

Congea is now classified in the family *Symphoremaceae* [*Symphoremataceae* of Airy Shaw, 1966], rather than in the true *Verbenaceae* as was formerly the practice. Besides Airy Shaw this disposition of the genus is also followed by Van Tieghem (1898) and Barkley (1965). Reichenbach (1828) and Dahlgren (1938) place it in the *Lamiaceae* [*Labiatae*].

It is also perhaps worth mentioning here that the Endlicher (1838) reference in the generic bibliography above is often cited as "1836-1856", the titlepage date, but the page here involved was actually issued in 1838. Similarly, Dop's 1915 work is often cited as "1914", but, according to a footnote on the titlepage, was not actually issued until 1915.

Howard (1974) reports the vascular bundles in *Congea* "fuse and invaginate at [the] ends". Turner (1967) reports a flower and leaf blight in the genus caused by the fungus, *Corticium solani* (Prill & Delacr.) Bourd. & Galz. Wellman (1972) tells us that when *Congea* branches "have aged the vine tips begin to show collapse and finally this natural condition results in dead ends. In the West Indies.....these.....vines often have old dead ends invaded by *Triblidiella*, which has a wide host range...A special situation occurs with regard to parasitism by the lichen [*Diplodia*] on the spectacular ornamental vine *Congea*. It was studied several times both in the West Indies and in Central America. The most showy part of the plant is the colored flower bracts and these had spotting from the lichen *Strigula* but no infections by the alga *Cephaleuros*. Under ample exposure all the true leaves of the vine are susceptible to algal infection."

Altschul (1973) reports an unidentified species of *Congea* [*Native Collector 403, Roy. Forest. Dept. 3810*] as having its roots used as a laxative. The species involved is probably *C. tomentosa* Roxb.

The *Colani 4027*, from Indochina, distributed as *Congea* and so determined by E. D. Merrill, is not a *Congea* nor is it anything symphoremaceous.

Type species: *Congea tomentosa* Roxb.

Excluded species:

Congea barbata Wall. = *Sphenodesme racemosa* (Presl) Mold.

Congea ferruginea Wall. = *Sphenodesme involucrata* (Presl) B. L.

Robinson

- Congea involucreatum* Wall. = *Symphorema polyandrum* Wight
Congea jackiana Wall. = *Sphenodesme pentandra* Jack & *S. triflora* Wight
Congea jackiana var. *attenuata* Wall. = *Sphenodesme pentandra* var. *wallichiana* (Schau.) Munir
Congea paniculata Wall. = *Sphenodesme involucreata* var. *paniculata* (C. B. Clarke) Munir
Congea pentandra (Roxb.) Wall. = *Sphenodesme pentandra* var. *wallichiana* (Schau.) Munir
Congea pentandra Wall. = *Sphenodesme pentandra* var. *wallichiana* (Schau.) Munir
Congea tomentosa var. *pubescens* Hock. = *Sphenodesme involucreata* var. *pubescens* Mold.
Congea unguiculata Wall. = *Sphenodesme involucreata* (Presl) B. L. Robinson
Congeeae sp. W. Griff. = *Sphenodesme involucreata* (Presl) B. L. Robinson
Congea Roxb. sensu Wall. = *Sphenodesme* Jack
Roscoea "Roxb. in part" = *Sphenodesme* Jack
Roscoea J. E. Sm. -- in the *Zingiberaceae*
Roscoea alpina Royle -- in the *Zingiberaceae*
Roscoea auriculata K. Schum. -- in the *Zingiberaceae*
Roscoea blanda K. Schum. -- in the *Zingiberaceae*
Roscoea brandisii K. Schum. -- in the *Zingiberaceae*
Roscoea capitata J. E. Sm. -- in the *Zingiberaceae*
Roscoea capitata var. *purpurea* Hort. = *R. capitata* var. *purpurata* Hort. in the *Zingiberaceae*
Roscoea capitata var. *purpurata* Hort. -- in the *Zingiberaceae*
Roscoea cautleoides Gagnep. -- in the *Zingiberaceae*
Roscoea chamaeleon Gagnep. -- in the *Zingiberaceae*
Roscoea debilis Gagnep. -- in the *Zingiberaceae*
Roscoea elatior J. E. Sm. -- in the *Zingiberaceae*
Roscoea exilis J. E. Sm. = *R. purpurea* J. E. Sm., in the *Zingiberaceae*
Roscoea flava Merr. -- in the *Zingiberaceae*
Roscoea gracilis J. E. Sm. -- in the *Zingiberaceae*
Roscoea humeana Balf. & Sm. -- in the *Zingiberaceae*
Roscoea intermedia Gagnep. -- in the *Zingiberaceae*
Roscoea longifolia Baker -- in the *Zingiberaceae*
Roscoea lutea Hassk. -- in the *Zingiberaceae*
Roscoea lutea Royle = *R. elatior* J. E. Sm., in the *Zingiberaceae*
Roscoea nigro-ciliata Hassk. -- in the *Zingiberaceae*
Roscoea pentandra Roxb. = *Sphenodesme pentandra* var. *wallichiana* (Schau.) Munir
Roscoea petiolata Royle = *Cautleya petiolata* Baker in the *Zingiberaceae*
Roscoea praecox K. Schum. -- in the *Zingiberaceae*
Roscoea procera Wall. = *R. purpurea* J. E. Sm. in the *Zingiberaceae*
Roscoea purpurea J. E. Sm. -- in the *Zingiberaceae*
Roscoea sikkimensis Hort. = *R. purpurea* J. E. Sm., in the *Zingiberaceae*

Roscoea spicata J. E. Sm. -- in the *Zingiberaceae*

Roscoea tibetica Batalin -- in the *Zingiberaceae*

Roscoea yunnanensis Loes. -- in the *Zingiberaceae*

CONGEA CHINENSIS Mold., *Phytologia* 2: 311--312. 1947.

Synonymy: *Congea chinensis* var. *chinensis* Munir, *Gard. Bull. Singapore* 21: 280. 1966.

Bibliography: Mold., *Phytologia* 2: 311--312. 1947; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 131 & 173. 1949; E. J. Salisb., *In. Kew. Suppl.* 11: 60. 1953; Mold., *Résumé* 169 & 439. 1959; E. H. Walker, *Bibliog. East. Asiat. Bot. Suppl.* 1: 235. 1960; Munir, *Gard. Bull. Singapore* 21: 267, 272, 275, 276, 278, 280--281, 294, 313, & 314, fig. 1, map 1. 1966; Mold., *Résumé Suppl.* 14: 3 & 8 (1960) and 15: 19. 1967; Mold., *Phytologia* 15: 269. 1967; Munir, *Gard. Bull. Singapore* 22: 157 & 158, fig. 1 F. 1967; Hocking, *Excerpt. Bot. A.* 13: 570. 1968; Mold., *Fifth Summ.* 1: 282, 288, & 468 (1971) and 2: 843. 1971.

Illustrations: Munir, *Gard. Bull. Singapore* 21: 281, fig. 1 (1966) and 22: 157, fig. 1 F. 1967.

Munir (1966) gives an excellent description and illustration of this taxon and comments that "Among all the species with four involucre bracts, *C. chinensis* is easily distinguished by its involucre bracts being united into a cup (up to 6 mm. long) at the base". He cites *Tsai 25611* from Yunnan, China, and *Kingdon-Ward 9049 & 20514* and *Toppin 4225 & s.n.* from Burma. He refers to *Tsai 25611* as the type collection, but *52611* is the collection on which the species was based by me. The discrepancy probably is due to a stenographic transposition of numerals.

A supposed natural hybrid of this species with *C. connata* Fletcher is *C. Xmuniri* Mold., which see.

Citations: CHINA: Yunnan: *Tsai 52611* (Cp--isotype, N--isotype, N--photo of type, S--type, Si--photo of type, W--1598328--isotype, Z--isotype, Z--photo of type).

CONGEA CHINENSIS var. *LATIBRACTEATA* Munir, *Gard. Bull. Singapore* 21: 280. 1966

Bibliography: Munir, *Gard. Bull. Singapore* 21: 267, 272, 275, 276, 278, 280, 282, & 313, fig. 1a, map 5. 1966; Mold., *Resume Suppl.* 14: 3. 1966; Munir, *Biol. Abstr.* 48: 5018. 1967; Mold., *Fifth Summ.* 1: 282 (1971) and 2: 843. 1971.

Illustrations: Munir, *Gard. Bull. Singapore* 21: 282, fig. 1a. 1966.

This variety is based on *Lace 6146* from Upper Burma and is not known to me from any other collection.

CONGEA CONNATA Fletcher, *Kew Bull. Misc. Inf.* 1938: 208--209. 1938.

Bibliography: Fletcher, *Kew Bull. Misc. Inf.* 1938: 208--209 & 440. 1938; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 60 & 92. 1942; Hill & Salisb., *Ind. Kew. Suppl.* 10: 58. 1947; Mold., *Phytologia* 2: 312. 1947; Mold., *Known Geogr. Distrib. Verbenac.*,

ed. 2, 137 & 173. 1949; Anon., Kew Bull. Gen. Index 82. 1959; Mold., Résumé 177 & 439. 1959; Munir, Gard. Bull. Singapore 21: 267, 273, 275, 276, 279, 294, 295, 313, & 314, fig. 5, map 6. 1966; Mold., Phytologia 15: 269. 1967; Mold., Résumé Suppl. 15: 19. 1967; Munir, Gard. Bull. Singapore 22: 157 & 158, fig. 1 H. 1967; Hocking, Excerpt. Bot. A.13: 570. 1968; Mold., Fifth Summ. 1: 295 (1971) and 2: 843. 1971; Mold., Phytologia 23: 424. 1972. Illustrations: Munir, Gard. Bull. Singapore 21: 295, fig. 5 (1966) and 22: 157, fig. 1 H. 1967.

This species is based on Kerr 17913 from Thailand. Its calyx-tube being about 6 mm. long distinguishes it at once from the similar *C. siamensis* Fletcher. It has been found growing on the high banks of streams, flowering in February. The species is very closely related to *C. siamensis* Fletcher because of its involucre cup, but the cup in the latter species is only about 4 mm. long and the bracts are 3 [or "sub-4"] and pink-magenta in color.

Munir (1966) cites from Thailand, where *C. connata* is apparently endemic: Collins 569, Kerr 6810 & 17913, Smith 306, and Smitinand BKF.14087, the Collins and Smith collections being from Koh Chang Island. What appears to be a natural hybrid of this species with *C. chinensis* is *C. xmuniri* Mold.

Citations: KOH CHANG ISLAND: Collins 569 (W--1700614, 2).

CONGEA FORBESII King & Gamble, Kew Bull. Misc. Inf. 1908: 114. 1908.

Synonymy: *Congea velutina* "sensu Bakh." ex Munir, Gard. Bull. Singapore 21: 289, in syn. 1966 [not *C. velutina* Auct., 1968, nor Wight, 1849, nor "Wight sec. Dop", 1966]. *Congea forbesii* var. *forbesii* [King & Gamble] ex Munir, Gard. Bull. Singapore 21: 289. 1966.

Bibliography: King & Gamble, Kew Bull. Misc. Inf. 1908: 114. 1908; King & Gamble, Journ. Asiat. Soc. Bengal 74 (2 extra): 866--867. 1908; Prain, Ind. Kew. Suppl. 4, imp. 1, 54. 1913; Dop, Bull. Soc. Bot. France 61: 321. 1915; H. J. Lam, Verbenac. Malay. Arch. 337--338 & 365. 1919; S. Moore, Journ. Bot. Lond. 63: Suppl. 82. 1925; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 60, 63, & 92. 1942; H. N. & A. L. Mold., Pl. Life 2: 59. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 138, 143, & 173. 1949; Prain, Ind. Kew. Suppl. 4, imp. 2, 54. 1958; Mold., Résumé 188 & 439. 1959; Munir, Gard. Bull. Singapore 21: 267, 270, 274, 276, 278, 289, 291--292, & 313, fig. 4, map 3. 1966; Mold., Résumé Suppl. 15: 19 & 20. 1967; Munir, Gard. Bull. Singapore 22: 157, fig. 1 D. 1967; Mold., Fifth Summ. 1: 323 & 469 (1971) and 2: 843. 1971.

Illustrations: Munir, Gard. Bull. Singapore 21: 291, fig. 4 (1966) and 22: 157, fig. 1 D. 1967.

The *C. velutina* Auct., referred to in the synonymy above, is a synonym of *C. griffithiana* Munir, while that of "Wight sec. Dop" is *C. tomentosa* var. *nivea* Munir; *C. velutina* Wight is a valid species.

Congea forbesii is apparently endemic to Sumatra. Munir (1966)

points out that "The presence of two linear-setaceous bracteoles between flower and involucre bracts is a special and distinct character found in no other species in the genus". Lam (1919) describes them as 4 in number, probably erroneously.

It is worth noting here that Meeuse regards *C. forbesii* as a synonym of *C. velutina* Wight.

The Moore reference (1925) in the bibliography of *C. forbesii* is sometimes inaccurately cited as authored by Rendle or as "S. Moore in Rendle". According to the table of contents of the issue involved the author was Moore alone.

Munir (1966) cites only the type collection of this species, *Forbes 1567*, from Sumatra.

Citations: GREATER SUNDA ISLANDS: Sumatra: *Forbes 1567* (Le--908141-62--isotype, N--isotype, N--photo of isotype, Vu--isotype, Vu--isotype, W--2317895--isotype, Z--isotype, Z--photo of isotype).

CONGEA FORBESII var. *RIDLEYANA* Munir, Gard. Bull. Singapore 21: 292--294, fig. 4a. 1966.

Synonymy: *Congea vestita* "Griff. in King & Gamble" ex Munir, Gard. Bull. Singapore 21: 292, in syn. 1966 [not *C. vestita* Griff., 1854, nor "Griff. sec. Dop", 1966]

Bibliography: King & Gamble, Journ. Asiat. Soc. Bengal 74 (2 extra): 865. 1908; H. J. Lam, Verbenac. Malay. Arch. 338. 1919; Ridl., Fl. Malay Penins. 2: 640. 1923; Dop, Fl. Gén. Indo-chine 4: 911. 1935; Munir, Gard. Bull. Singapore 21: 267, 270, 275, 276, 278, 292--294, 313, & 314, fig. 4a, map 3. 1966; Mold., Résumé Suppl. 15: 11 & 12. 1967; Munir, Biol. Abstr. 48: 5018. 1967; Mold., Fifth Summ. 1: 305 & 323 (1971) and 2: 843. 1971.

The *C. vestita* Griff., referred to in the synonymy above, is a valid species, but that referred to Dop is in part *C. pedicellata* Munir and in part *C. tomentosa* var. *nivea* Munir.

Congea forbesii var. *ridleyana* is based on *Ridley 6993* from Arakuda Woods, Wellesley, Malaya, deposited in the Singapore Botanical Garden herbarium. Munir (1966) cites also *Dolman 21509*, *Kadir SF.35803*, *Padaicher s.n.*, *Spare 37314*, and *Wolfe & Kadir SF.21455* from Kedah and *Pool 1 s.n.* from Sumatra.

CONGEA GRIFFITHIANA Munir, Gard. Bull. Singapore 21: 285--289, fig. 3. 1966.

Synonymy: *Congea villosa* Roxb. ex Wight, Icon. Pl. Ind. Orient. 4 (3): pl. 1479/B, hyponym. 1849. *Congea villosa* Wight apud Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 595. 1893. *Congea villosa* (Roxb.) Wight ex Junell, Symb. Bot. Upsal. 1 (4): 133. 1934 [not *C. villosa* (Roxb.) Wight ex C. B. Clarke, 1885]. *Congea tomentosa* King & Gamble ex Mold., Résumé 275, in syn. 1959 [not *C. tomentosa* Roxb., 1819, nor "Roxb. sec. Dop", 1966, nor "Roxb. sec. Fletcher", 1966, nor "Roxb. sec. Wight", 1960, nor Hall. f., 1947, nor "(Roxb.) Wight" apud Munir, 1966]. *Congea tomentosa* var. *velutina* (Wight) Bakh. ex Mold., Résumé 275, in syn. 1959. *Congea tomentosa* "Roxb. sensu King & Gamble" apud

Munir, Gard. Bull. Singapore 21: 285, in syn. 1966. *Congea griffithiana* var. *griffithiana* Munir, Gard. Bull. Singapore 21: 285. 1966. *Congea velutina* Auct ex Backer & Bakh., Fl. Java 3: 657, in syn. 1968 [not *C. velutina* Wight, 1849].

Bibliography: Hook., Bot. Misc. 286. 1830; Roxb., Fl. Ind., ed. 2, imp. 1 [Carey], 3: 55--56. 1832; Voigt, Hort. Suburb. Calc. 473. 1845; Wight, Icon. Pl. Ind. Orient. 4 (3): 15, pl. 1479/B. 1849; Schnitzl., Icon. Fam. Nat. Reg. Veg. 2: 137, Verbenac. [2]. 1856; Roxb., Fl. Ind., ed. 2, imp. 2 [Clarke], 476--477. 1874; C. B. Clarke in Hook. f., Fl. Brit. India 4: 603. 1885; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 595. 1893; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 181. 1895; Gamble, Man. Indian Timb., ed. 2, imp. 1, 545. 1902; Brandis, Indian Trees, imp. 1, 513 & 514. 1906; King & Gamble, Journ. Asiat. Soc. Bengal 74 (2 extra): 866. 1908; H. Hallier, Meded. Rijks Herb. Leid. 37: 86. 1918; Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 100 & 101. 1921; Gamble, Man. Indian Trees, ed. 2, imp. 2, 545. 1922; Ridl., Fl. Malay Penins. 2: 640. 1923; Junell, Symb. Bot. Upsal. 1 (4): 133--138 & 209, fig. 208 a--e, & 211--219. 1934; K. V. O. Dahlgren, Svensk. Bot. Tidsk. 32: 231. 1938; Fletcher, Kew Bull. Misc. Inf. 1938: 439 & 440. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 55, 59--61, & 92. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 595. 1946; Mold., Alph. List Inv. Names Suppl. 1: 8. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 129, 136, 137, 160, & 173. 1949; Erdtman, Pollen Morph. Pl. Tax., ed. 1, imp. 1, 448. 1952; Steiner, Philip. Ornament. Pl. 148. 1952; Anon., Kew Bull. Gen. Index 82. 1959; Mold., Résumé 165, 175, 177, 179, 217, 275, 343, & 439. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 595. 1960; G. L. Davis, Syst. Embryol. Angiosp. 271. 1966; Erdtman, Pollen Morph. Pl. Tax., ed. 2, 448. 1966; Mold., Résumé Suppl. 14: 3--5 & 8. 1966; Munir, Gard. Bull. Singapore 21: 259, 261--265, 267, 274--276, 278, 285--289, 313, & 314, fig. 3, map 3. 1966; Mold., Résumé Suppl. 15: 7, 11, & 20. 1967; Munir, Biol. Abstr. 48: 5018. 1967; Munir, Gard. Bull. Singapore 22: 157 & 158, fig. 1 E. 1967; Backer & Bakh., Fl. Java 3: 657. 1968; Corner & Watanabe, Illust. Guide Trop. Pl. 759. 1969; Mold. in Menninger, Flow. Vines 328. 1970; Brandis, Indian Trees, imp. 2, 513 & 514. 1971; Erdtman, Pollen Morph. Pl. Tax., ed. 2, imp. 2, 448. 1971; Mold., Fifth Summ. 1: 230, 282, 295, 300, 305, 361, 468, & 469 (1971) and 2: 843. 1971; Roxb., Fl. Ind., ed. 2, imp. 3, 476 & 477. 1971; Gamble, Man. Indian Timb., ed. 2, imp. 3, 545. 1972; Mold., Phytologia 23: 423 (1972) and 28: 449. 1974; Heslop-Harrison, Ind. Kew. Suppl. 15: 35. 1974; Mold., Phytologia 34: 269. 1976.

Illustrations: Wight, Icon. Pl. Ind. Orient. 4 (3): pl. 1479/B. 1849; Junell, Symb. Bot. Upsal. 1 (4): 134 & 136, fig. 208 a--e & 211--219. 1934; Munir, Gard. Bull. Singapore 21: 286, fig. 3 (1966) and 22: 157, fig. 1 E. 1967; Corner & Watanabe, Guide Trop. Pl. 759. 1969.

Munir (1966) gives an excellent and detailed description and history of this species and its nomenclature. He notes that "This

remarkable species often confused with *C. velutina* and *C. villosa* (Roxb.) is readily distinguished by its 4 involucre bracts which are quite free to the base and violet in colour and spatulate much narrowed toward the base. The two other species, *C. rockii* and *C. forbesii*, also with 4 bracteate involucre and no cup at the base, have elliptic to oblanceolate and more densely hoary whitish bracts". The species is native to southern Burma, Thailand, and Malaya and is widely cultivated there and elsewhere.

Erdtman (1966) has examined the pollen of a cultivated specimen of *C. griffithiana* from Singapore and describes the grains as 3-colporate (colpi more or less irregularly 3--4-orate), subprolate, about 35 x 30 μ , the sexine as thick as the nexine, reticulate, the muri simpli-duplibaculate, the colpi membranes psilate, the ora lalongate, not confined to the colpi membranes but forming more or less deep cuts in the adjoining mesocolpial exine.

Junell (1934) provides a very detailed analysis of the gynoecium morphology and embryology of this species. Recent collectors describe the plant as a shrub, 2.5 m. tall, or a large climbing vine, to 15 feet long, woody, much-branched, the stems to 7 cm. in diameter at breast height, the "entire inflorescence a deep rosy-pink", the flowers profuse, odorless, and the bracts pink or deep rosy-pink to purple. They have encountered it in hedges, "brushwoods", bamboo and evergreen forests, and near streams, at 98--1000 m. altitude, flowering from January to April and in October. Snan refers to it as "scattered in evergreen jungles" in Thailand. The corollas are said to have been "pink" on Rivera s.n. and Snan 99. Rivera refers to the plant as "an upland species". The only vernacular name recorded for it is "chingcha".

It seems most probable that the "*C. tomentosa*", described by Steiner (1952) from the Philippines, actually is *C. griffithiana*.

Munir (1966) cites the following collections: BURMA: *Griffith s.n.* [Wallich 1479/B & 6012/1]. THAILAND: Collins s.n., Curtis 2903 & 2962, Haniff 3853, Kerr 12470, 14762, 16656, & 17466, Smith 650, Snan 99, 913, & s.n. MALAYA: Kedah: Kadir SFN.35802, Sow 34622. CULTIVATED: Borneo: Tatong 2000. Java: Baker 36411, Bakhuizen 285, Durand 7204, Herb. Hort. Bogor XII.B.IX.53, XV.E.3, & XV.E.71, Visser C.90401. Philippine Islands: *Canicosa* 9636, Esben 34293, Philippine Nat. Herb. 92025, Rivera 33460, Steiner 22801 & 22931, Sulit 8313. Sumatra: Lörzing 11949. Zaire: Goossens 4511.

Material of this species has usually been misidentified and/or distributed in herbaria as *C. tomentosa* Roxb. or *C. velutina* Wight. On the other hand, the Erlanson 5368, Lindhard s.n., and Furtado s.n. [Nov. 15, 1929], distributed as *C. griffithiana*, actually are *C. tomentosa* Roxb., while Pételot 3852 is *C. tomentosa* var. *nivea* Munir.

It is most probable that the Zaire and Philippine collections cited below represent cultivated material or else material naturalized after cultivation or persistent after cultivation, but the accompanying labels do not indicate this.

Citations: THAILAND: Snan 99 [Herb. Roy. Forest Dept. 12168] (Z).

ZAIRES: *Goossens 4511* (N). PHILIPPINE ISLANDS: Luzon: *Pancho 204* (Au--11015). CULTIVATED: India: *Erlanson 5368* (N). Java: *Herb. Hort. Bot. Bogor. XII.B.IX.53* (Bz--26251, Bz, N), *XV.E.1* (Bz--26255, Bz, N), *XV.E.71* (Bz--26277, Bz, N), *XV.E.71a* (Bz--26278, Bz--26546, Bz, N). Malaya: *Herb. Mus. Bot. Upsal. s.n.* [Hort. Bot. Str. Settl. 13/10/32] (S). Philippine Islands: *Rivera s.n.* [Philip. Nat. Herb. 33460] (W--2212540); *Steiner 597* [Philip. Nat. Herb. 22931] (W--2212530). Samoan Islands: *Whistler W.843* (W--2738270). Sri Lanka: *Collector undetermined 125/58* (Pd, Pd); *Moldenke, Moldenke, Dassanayake, & Jayasuriya 28339* (Ld, Pd, W--2764545); *Moldenke, Moldenke, & Jayasuriya 28135* (Ac, Ld, Pd, W--2764404); *F. W. de Silva 3* (Pd).

CONGEA GRIFFITHIANA var. *ELLIPTICA* Munir, Gard. Bull. Singapore 21: 289--290, fig. 3a. 1966.

Bibliography: Munir, Gard. Bull. Singapore 21: 275, 278, & 289--290, fig. 3a. 1966; Mold., Fifth Summ. 1: 282 (1971) and 2: 843. 1971.

Illustrations: Munir, Gard. Bull. Singapore 21: 290, fig/ 3a. 1966.

This variety is based on *Proudlock 36* from Mergui Island, Burma, deposited in the Calcutta herbarium. Munir (1966) cites only the type collection and notes that the variety "can be easily distinguished from the type form by its involucre bracts being elliptic, acute at apex, and [the] peduncles [being] longer and thicker". Thus far the variety is known only from the original collection.

CONGEA HANSENI Mold., Résumé Suppl. 12: 7, nom. nud. [as "*hanseni*"]. 1965; Dansk Bot. Arkiv 23: [306]. 1966.

Synonymy: *Congea hanseni* Mold., Résumé Suppl. 12: 7, nom. nud. 1965.

Bibliography: Mold., Résumé Suppl. 12: 7. 1965; Mold., Dansk Bot. Arkiv 23: [306]. 1966; Mold., Résumé Suppl. 15: 19. 1967; Hocking, Excerpt. Bot. A.12: 338. 1968; Mold., Fifth Summ. 1: 295 & 468 (1971) and 2: 843. 1971; Heslop-Harrison, Ind. Kew. Suppl. 15: 35. 1974.

This species is based on *Hansen, Seidenfaden, & Smitinand 11182* from Tung Salaëng Luang, Phitsanulok, Thailand, at 550 m. altitude, collected on February 15, 1964, and deposited in the Copenhagen herbarium. It is said to be closely related to *C. oblonga* Pierre [now known as *C. tomentosa* var. *nivea* Munir], differing in its smaller and often binary involucre bracts.

Citations: *Hansen, Seidenfaden, & Smitinand 11182* (Cp--type, Z--isotype).

CONGEA xMUNIRI Mold., Phytologia 15: 269. 1967.

Synonymy: *Congea "connata* Fletcher (x? *C. chinensis* Mold.)" ex Munir, Gard. Bull. Singapore 21: 294. 1966. *Congea munirii* Mold. apud Heslop-Harrison, Ind. Kew. Suppl. 15: 35. 1974.

Bibliography: Munir, Gard. Bull. Singapore 21: 294. 1966; Anon., Biol. Abstr. 48 (23): B.A.S.I.C. S.41 & S.140. 1967; Mold., Biol.

Abstr. 48: 10560. 1967; Mold., Résumé Suppl. 15: 19. 1967; Hocking, Excerpt. Bot. A.13: 570. 1968; Mold., Fifth Summ. 1: 300 & 468 (1971) and 2: 843. 1971; Heslop-Harrison, Ind. Kew. Suppl. 15: 35. 1974; Mold., Phytologia 31: 396 (1970) and 45: 56. 1980.

This supposed natural hybrid between *C. chinensis* Mold. and *C. connata* Fletcher is based on *Alleizette s.n.* from Phan Rang, Annam (Vietnam), Indochina, deposited in the Leiden herbarium. Munir (1966) says that it has "3--4 distinct bracts which are white above as in *C. connata*". Thus far it is known only from the type collection.

CONGEA PEDICELLATA Munir, Gard. Bull. Singapore 21: 300--302, fig. 8. 1966.

Synonymy: *Congea* "tomentosa Roxb. sec. Dop" ex Munir, Gard. Bull. Singapore 21: 300, in syn. 1966 [not *C. tomentosa* Roxb., 1819, nor Hall. f., 1947, nor King & Gamble, 1959, nor "Roxb. sec. Wight", 1960, nor "Roxb. sensu King & Gamble", 1966]. *Congea* "vestita Griff. sec. Dop" [in part] ex Munir, Gard. Bull. Singapore 21: 300, in syn. 1966 [not *C. vestita* Griff., 1854]. *Congea* "peteloti Mold...p.p., non typica" ex Munir, Gard. Bull. Singapore 21: 300, in syn. 1966 [not *C. peteloti* Mold., 1951].

Bibliography: Munir, Gard. Bull. Singapore 21: 267, 271, 275, 276, 279, 300--302, 305, 313, & 314, fig. 8, map 4 (1966) and 22: 158. 1967; Mold., Résumé Suppl. 15: 10, 19, & 20. 1967; Munir, Biol. Abstr. 48: 5018. 1967; Mold., Fifth Summ. 1: 295, 300, 468, & 469 (1971) and 2: 843. 1971; Heslop-Harrison, Ind. Kew. Suppl. 15: 35. 1974; Mold., Phytologia 45: 57. 1980.

Illustrations: Munir, Gard. Bull. Singapore 21: 301, fig. 8. 1966.

The species is based on *Pierre s.n.* from Dong Nai, Cochinchina, Indochina, deposited in the Berlin herbarium. Munir (1966) notes that "From *C. vestita* this species differs in its fine, very short, whitish indumentum on the branchlets, inflorescence axes, peduncles and calyces; the leaves are chartaceous cinereo-pubescent; involucrel bracts much narrowed to the base, and the flower pedicels longer". He cites *Alleizette* 5723, three *Pierre s.n.* collections, *Smitinand & Abbe* 6371, and *Thorel* 648 from Cochinchina, *Harmand* 139, *Poilane* 13683, *Talbot* 103, and *Thorel* 2639 from Laos, *Allaizette s.n.* from Tonkin, and *Poilane* 11674 from Vietnam. He suggests that *C. vestita* var. *subvestita* Munir may represent a hybrid between *C. pedicellata* and *C. vestita* W. Griff.

The *C. tomentosa* credited to Hallier and to King & Gamble in the synonymy above is a synonym of *C. velutina* Wight, while that accredited to Roxburgh "sensu King & Gamble" is *C. griffithiana* Munir and that ascribed to Roxburgh "sec. Wight" is *C. vestita* W. Griff. True *C. peteloti* Mold. is regarded by Munir as a synonym of *C. tomentosa* var. *nivea* Munir.

Recent collectors have referred to *C. pedicellata* as a woody climber common in mixed deciduous woods of Cochinchina, found by them at 600 m. altitude, the "flowers whitish" in January.

Material has been widely misidentified and distributed in herbaria as *C. peteloti* Mold. and as *C. vestita* W. Griff.

Citations: INDOCHINA: Cochinchina: *Pierre s.n.* (W--2515740); *Smitinand & Abbe 6371* [Herb. Roy. Forest Dept. 24833] (Z).

CONGEA ROCKII Mold., *Phytologia* 8: 14--15. 1961.

Synonymy: *Congea rockii* Mold. apud Munir, *Gard. Bull. Singapore* 21: 283. 1966.

Bibliography: Mold., *Phytologia* 8: 14--15. 1961; Hocking, *Excerpt. Bot. A.5:* 45. 1962; Mold., *Biol. Abstr.* 37: 1062. 1962; Mold., *Resume Suppl.* 3: 20 (1962) and 14: 8. 1966; Munir, *Gard. Bull. Singapore* 21: 267, 273--275, 278, 283--284, fig. 2, & map 6 (1966) and 22: 157 & 158. 1967; G. Taylor, *Ind. Kew. Suppl.* 14: 36. 1970; Mold., *Fifth Summ.* 1: 295 & 468 (1971) and 2: 843. 1971.

Illustrations: Munir, *Gard. Bull. Singapore* 21: 284, fig. 2. 1966.

Munir (1966) notes that, although the original description of this species speaks of 3-flowered sessile cymes and 3 involucre bracts, "the heads (cymes) are actually [short-] pedunculate, bearing 5--6 flowers, and their involucre bracts are always 4. However, the inflorescence is young and the peduncule and other parts are not fully developed, and the two opposite cymes become so congested in the axils of the foliar bracts that the examination of the cyme is not easy. The long hairs also interfere with the counting of flowers. Hence, unless a cyme is detached it is difficult to make a proper analysis".

The collector refers to this plant as a vine with white "flowers" and found it in anthesis in January. It is known thus far only from the type collection which was originally misidentified and distributed in herbaria as *C. tomentosa* Roxb.

Citations: THAILAND: *Rock 1677* (Ca--264568--type, W--1214567--isotype, Z--isotype).

CONGEA SIAMENSIS Fletcher, *Kew Bull. Misc. Inf.* 1938: 209 & 440. 1938.

Bibliography: Fletcher, *Kew Bull. Misc. Inf.* 1938: 209 & 440. 1938; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 60 & 92. 1942; Hill & Salisb., *Ind. Kew. Suppl.* 10: 58. 1947; Mold., *Phytologia* 2: 312. 1947; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 137 & 173. 1949; Anon., *Kew Bull. Gen. Index* 82. 1959; Mold., *Résumé* 177 & 439. 1959; Mold., *Résumé Suppl.* 3: 17 & 20. 1962; Mold., *Dansk Bot. Arkiv* 23 : [85]--86, fig. 1. 1963; Munir, *Gard. Bull. Singapore* 21: 267, 272, 275, 276, 279, 298--299, & 313, fig. 7, map 5 (1966) and 22: 158. 1967; Mold., *Fifth Summ.* 1: 282 & 295 (1971) and 2: 843. 1971; Mold., *Phytologia* 45: 56. 1980.

Illustrations: Mold., *Dansk Bot. Arkiv* 23: 86, fig. 1. 1963; Munir, *Gard. Bull. Singapore* 21: 299, fig. 7. 1966.

Munir (1966) notes that "This species is often confused with *C. tomentosa* because of the resemblance in the number and colour of their involucre bracts; but the inflorescence axis of *C. siamensis* is less tomentose, involucre bracts and the calyx teeth shorter and has a conspicuous involucre cup. *C. connata* is very close to this in having an involucre cup, but the cup itself is much longer (16 mm.) and the involucre bracts are always 3 and whitish".

[to be continued]